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(54) System for identifying and adapting a TV-user profile by means of speech technology

(57) Speech input supplied by the user is evaluated by the speaker verification/identification module, and based on the evaluation, parameters are retrieved from a user profile database. These parameters adapt the speech models of the speech recognizer and also supply the natural language parser with customized dialog grammars. The user's speech is then interpreted by the speech recognizer and natural language parser to determine the meaning of the user's spoken input in order to control the television tuner. The parser works in conjunction with a command module that mediates the dialog with the user, providing on-screen prompts or synthesized speech queries to elicit further input from the user when needed. The system integrates with an electronic program guide, so that the natural language parser is made aware of what programs are available when conducting the synthetic dialog with the user. Speech can be input through either a microphone or over the telephone. In addition, the user can interact with the system using a suitable computer attached via the Internet. Regardless of the mode of access, the unified access controller interprets the semantic content of the user's request and supplies the appropriate control signals to the television tuner and/or recorder.

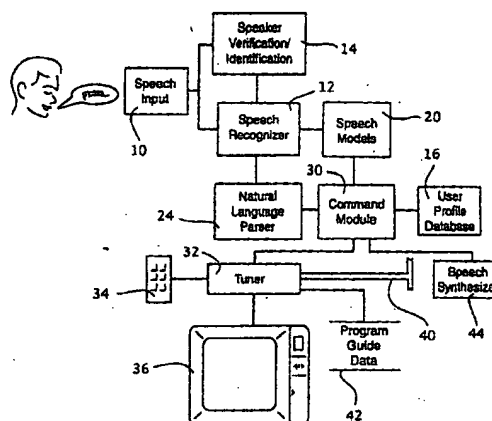


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 7289

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 96 21990 A (SCIENTIFIC-ATLANTA) 18 July 1996 (1996-07-18)	1-3, 8, 9, 11-16	H04N5/44
Y	* abstract *	4-6, 10, 17, 21-29	
	* page 3, line 15 - line 21 *		
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	* page 8, line 10 - line 16 *		
	* page 10, line 13 - page 11, line 20 *		
	* page 16, line 9 - line 14 *		
	* page 23, line 15 - page 24, line 11 *		
	* page 29, line 16 - page 31, line 4 *		
	* page 34, line 11 - page 36, line 9 *		
	* page 38, line 17 - page 39, line 16 *		
	* page 44, line 12 - page 47, line 5 *		
	* page 53, line 4 - line 12 *		
	* page 58, line 1 - page 59, line 19 *		
	* page 66, line 3 - page 67, line 18 *		

X	DATABASE WPI Section EI, Week 199207 Derwent Publications Ltd., London, GB; Class W03, AN 1992-055708 XP002204052 ANONYMOUS: "Speech operated remote control device for multiple uses - uses speech recognition button-less input and provides IR signal command as output"	1, 9	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 1 July 2002	Examiner Berwitz, P
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document	

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 7289

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	KUHN R ET AL: "EIGENVOICES FOR SPEAKER ADAPTATION" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SPOKEN LANGUAGE PROCESSING, XX, XX, 1998, pages 1771-1774, XP000910944 * abstract, first paragraph *	6	
Y	US 5 444 499 A (SONY) 22 August 1995 (1995-08-22) * column 5, line 35 - column 6, line 68 *	10	
Y	EP 0 895 396 A (TEXAS INSTRUMENTS) 3 February 1999 (1999-02-03) * column 3, line 24 - column 8, line 20 *	26-29	
A	WO 98 57501 A (NORTHERN TELECOM) 17 December 1998 (1998-12-17) * the whole document *	17-19, 24,25, 28,29	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 1 July 2002	Examiner Berwitz, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**LACK OF UNITY OF INVENTION
SHEET 8**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-5, 8-16

Speech based audio-visual equipment controller. User's voice identification and commands generation according to stored user's profile.

2. Claims: 6, 7

Speech based audio-visual equipment controller. Storage of customized dialogs and grammars for communication with the user.

3. Claims: 17-29

Speech based audio-visual equipment controller. Remote control by phone of an audio-visual equipment in relation to a stored electronic program guide.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 7289

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-07-2002

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82